INTEGRATED CIRCUIT

AWM 1302

COMPLEMENTARY DATA LINE RECEIVER

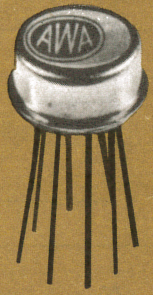
The AWM1302 is a dual DTL MSI integrated circuit designed to receive and decode the high speed digital data from two AWM1301 complementary data line drivers over a twisted pair transmission line.

Data output is only obtained when complementary information is presented to the inputs of the receiver. This method of operation achieves superior noise immunity and protection is provided against spurious line spikes by input clamping diodes.

The output logic levels are compatible with series 74 TTL and active pull-up is provided on the outputs.

GENERAL CHARACTERISTICS

Package	8 lead T05
Storage Temperature	–10 to +140°C
Operating Temperature	–10 to +70°C
Supply Voltage Range	+4.5 to +5.5 volts
Maximum Input to any Pin	+5.5 volts
Minimum Input to any Pin	–0.5 volts
Logic Level Outputs	DTL/TTL compatible
Fan out	20 standard loads
Delay time	75 nS. (Typical).
Power Dissipation (High output).	60 mW.



8 lead T05 Package.
Details on page 4.

APPLICATIONS

- Conversion of high speed complementary digital information from a twisted line to the original digital information.
- Computer coupling to industrial processes over twisted lines.

FEATURES

- Compatible with series 74 TTL.
- Receiver for the AWM1301 driver.
- Excellent noise immunity.
- Input is protected.
- Active pull-up on output.

AWM1302 COMPLEMENTARY DATA LINE RECEIVER.

Designed and Manufactured in Australia by –
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AWM 1302
Issue 11–70
Supersedes Issue ——

SCHEMATIC CIRCUIT

Two identical circuits are in each package.

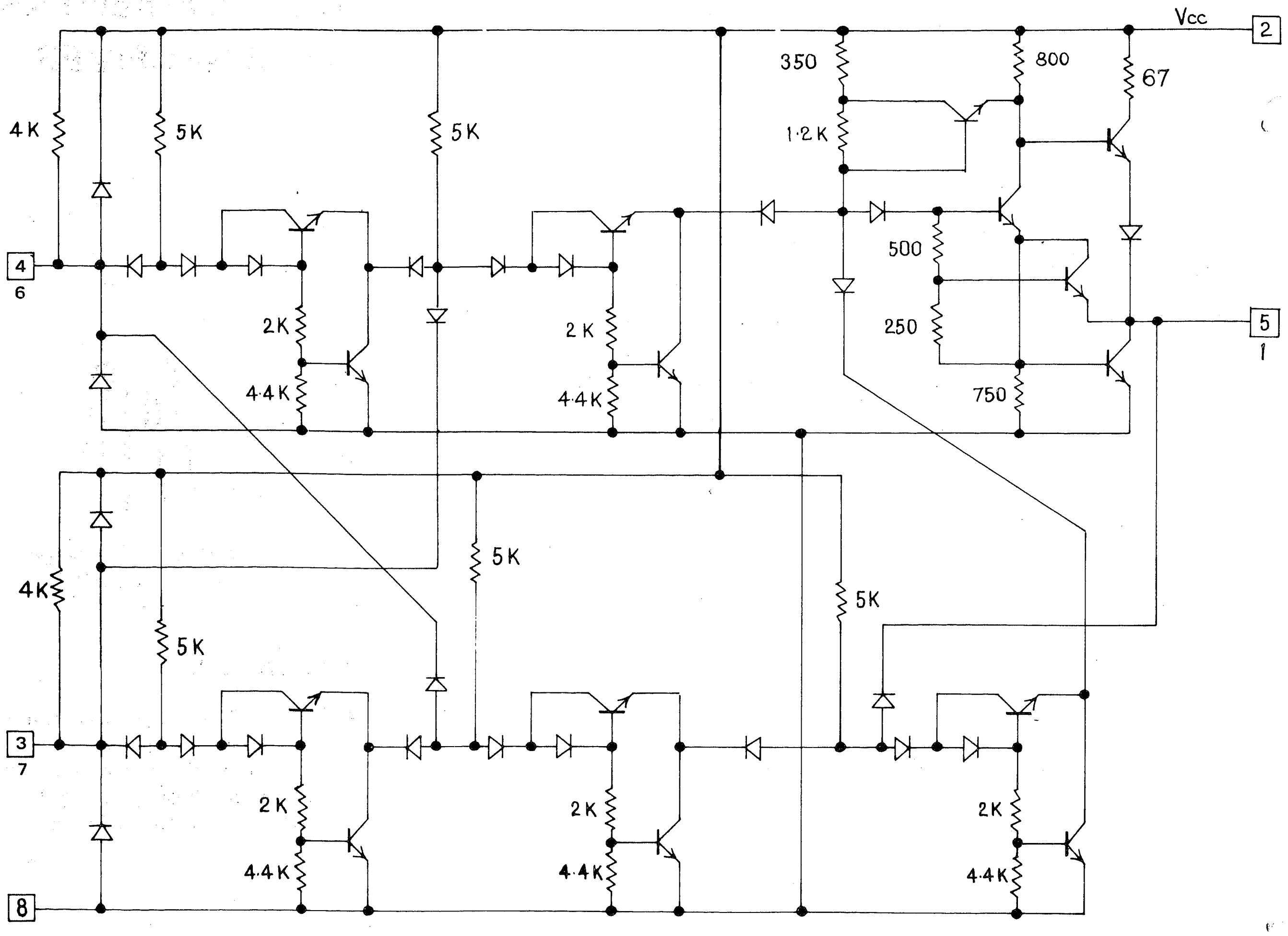
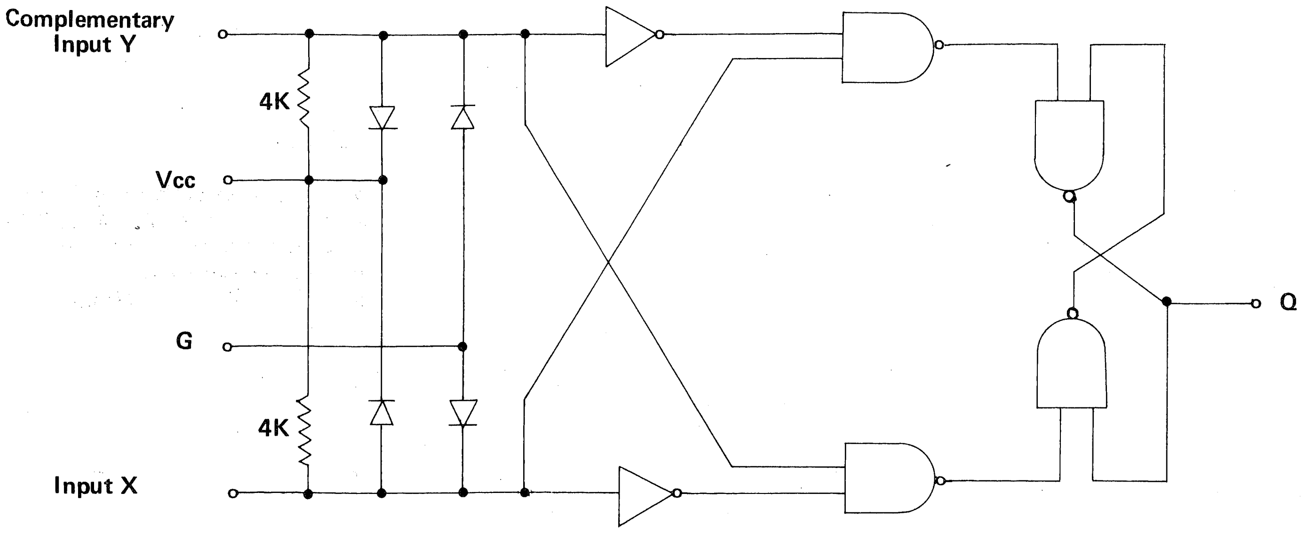


Figure 1. The resistance values shown in the circuit are nominal only.



TRUTH TABLE

Input X	Complementary Input Y	Q
H	H	*
H	L	H
L	H	L
L	L	*

* Output remains unchanged from previous state.

STATIC ELECTRICAL CHARACTERISTICS

Pin	Function	Parameter ($T_A = 25°C$)	Forcing Function	Limits Min.	Limits Typ.	Limits Max.	Units
1	Output 2	High State: Voltage (V_{OH})	Vcc = 5.0V	3.0			V
		Short Circuit: Current (I_{SC})	Vo = 0.0V	−30	−42	−60	mA
		Low State: Voltage (V_{OL})	(I_L) = 32mA		0.35	0.4	V
2	Positive Supply	Voltage Vcc		4.5	5	5.5	V
		Current	Vcc = 5.0V Output Voltage high		12	18	mA
3	Input 1	High State: Voltage (V_{IH})	Vcc = 5.0V	2.1		6.0	V
		Current (I_{IH})	Note 1				
		Low State: Voltage (V_{IL})		−1.0		0.9	V
		Current (I_{IL})	V_{IL} = 0V	−1.5	−2.1	−3	mA
4	Complementary Input 1	See pin 3.					
5	Output 1	See pin 1.					
6	Complementary Input 2	See pin 3.					
7	Input 2	See pin 3.					
8	Ground						

Note 1. Input leads are joined to Vcc through internal resistors (4KΩ typical). All voltages in respect to ground (Pin 8).

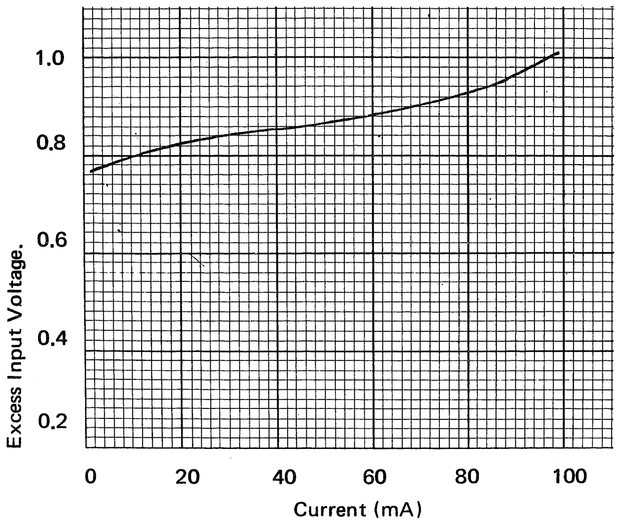


Figure 2. Typical protection diode characteristic.

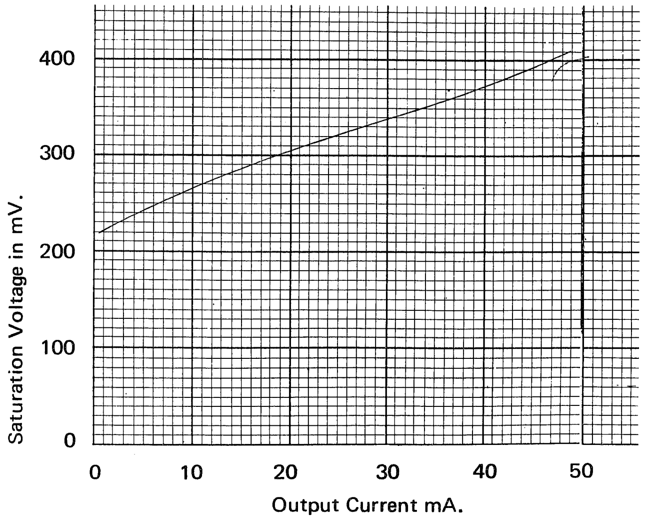


Figure 3. The Q terminal typical output characteristic.

PROPAGATION DELAY CHARACTERISTICS

Delay Times.

td_{av} = 75 n S (Average)

td_{av} = 85 n S (Maximum)

td_{av} is the average delay of "1" propagation and "0" propagation through the device.

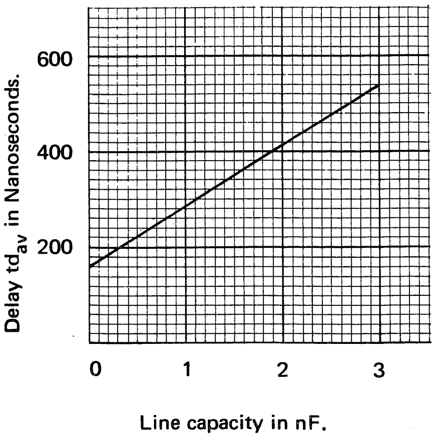


Figure 4. Typical propagation delay times for various load capacities.

AWM1301/1302 **Propagation Test Circuit.**

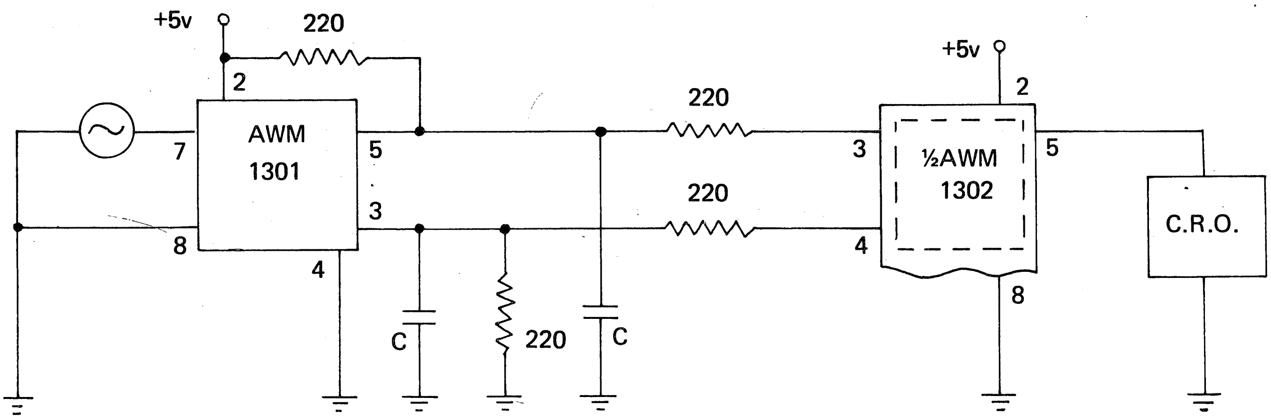
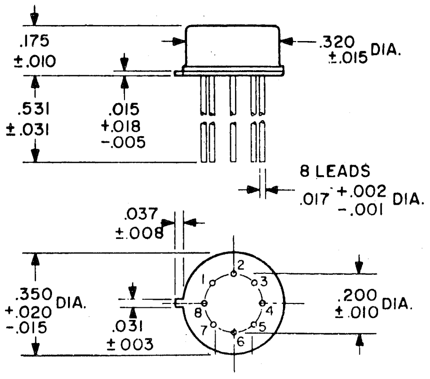


Figure 5. The test unit circuit used to derive the delay times shown in figure 4.

PIN CONNECTIONS AND DIMENSIONAL OUTLINE.

Pin No 1. Output 2
2. Positive supply
3. Input 1
4. Complementary Input 1
5. Output 1
6. Complementary Input 2
7. Input 2
8. Ground and case



Dimensions in Inches

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